

### REMARKS

The Examiner's indication that all of the items listed on Form PTO-1449 of the Information Disclosure Statements of August 30, 2001 and February 11, 2004 have been considered is acknowledged and much appreciated.

The Examiner's withdrawal of all prior objections to Claims 1-6 and 16-21, all associated correction requirements, and all prior rejections of Claims 1-6 and 16-21, is acknowledged and much appreciated.

Former Claims 1-6 and 16-21 have been cancelled and new Claims 22-52 have been added. Each of new Claims 22-27 is no different than its corresponding former Claim 1-6, respectively, with the exception of the numbers associated with the various claims. Each of new Claims 39-43 is no different than its corresponding former Claim 16 and 18-21, respectively, with the exception of preamble text and the numbers associated with the various claims. Each of new Claims 22-27 and 39-43 is no narrower than its corresponding former claim. New Claims 28-38 and 44-52 are directed to additional subject matter that Applicants regard as their invention, as supported by the specification. Claim 49 is similar to, but broader than, former Claim 17, as it recites a method of processing a substrate that comprises, *inter alia*, heating the substrate to at least a heat-treatment temperature of the substrate, as fully recited in Claim 49 as set forth above and as supported by the specification. No new matter has been added by virtue of the amendments to the claims.

Former Claims 1-6, 16 and 18-21 (hereinafter, new Claims 22-27 and 39-43) were rejected under 35 U.S.C. Section 103(a) as allegedly being unpatentable over U.S. Patent No. 5,344,718 to Hartig *et al.* (hereinafter, simply "Hartig") in view of U.S. Patent No. 6,115,180 to Hirai *et al.* (hereinafter, simply "Hirai"). These rejections are respectfully traversed as to corresponding new Claims 22-27 and 39-43.

Hartig fails to teach or suggest an optical coating for a substrate, comprising: a first anti reflection layer of a dielectric; a first metallic layer over the first anti-reflection layer; and a second anti-reflection layer of a dielectric over the first metallic layer; wherein at least one of the first anti-reflection layer and the second anti-reflection layer comprises an amorphous material, the amorphous material comprising titanium oxide and an additive, wherein the additive in an oxidized state does not form a solid solution with the titanium oxide, as recited in each of Claims 22-27. The Examiner has not alleged or demonstrated otherwise.

After recognizing various deficiencies in Hartig, the Examiner alleges that it would have been obvious to one of ordinary skill in the art to combine Hartig with the teachings of Hirai for the benefit of making a low-emissivity coated article with desired optical properties (including transmission, reflection, and anti-reflection properties) and polarization independence. (See Office Action, pages 3-4.) However, Hirai is non-analogous art, as remarked upon below, and thus, has no bearing on the patentability of Claims 22-27.

Hirai's teaching does not pertain to the field of Applicant's endeavor and is not reasonably pertinent to the particular problem with which Applicant was involved, and thus, is non-analogous art. See *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767, 1773 (Fed. Cir. 1993) (Reference not in same field of endeavor as the claimed invention merely because both relate to memories and not reasonably pertinent to particular problem (small size) with which Applicants were involved, and thus, held to be non-analogous.). Hirai concerns an optical branching filter for causing light of desired wavelengths to branch off, which is suitable for a wavelength-division multiplexing (WDX) optical communication. (See Hirai, col.1, ll.5-17.) Such does not pertain to the field of Applicant's endeavor in the area of optical coatings for substrates, which may be large area substrates or modifiable substrates (for example, initially flat, but shapeable substrates), such as architectural glass or automotive glass, merely by way of example. The purpose of Hirai is to provide an optical branching filter, such as a broadband reflection filter or a narrowband transmission filter, suitable for wavelength-division multiplexing optical communication, that is more accurate than certain conventional optical filters and that is more accurate, less complex, and easier to manufacture than rugate filters. (See Hirai, cols.1-3.) This is vastly different from Applicant's purpose of providing an optical coating that may be applied before modification of a substrate, such as high-temperature processing, shaping, or bending of a substrate, merely by way of example, and that, if so applied, may withstand the conditions of the modification process. The Examiner has not shown otherwise.

Hirai teaches an optical communication filter, comprising a complicated layered structure that has a refractive-index inclined laminated portion, in which successively inclined (in terms of refractive index) and directionally changed (in terms of lamination direction) layers of dielectric material are employed, and that further has an alternately-laminated portion, in which a dielectric material of a high refractive index and a dielectric material of a

low refractive index are alternately laminated on each other (see Hirai, col.8, ll.40-48). The teaching of Hirai is not reasonably pertinent to the problem with which Applicant was involved, that of further developing the optical coating of substrates, which may be large area substrates or modifiable substrates (for example, initially flat, but shapeable substrates), such as architectural glass or automotive glass, merely by way of example, such that the optical coating may withstand the conditions of substrate processing, such as high-temperature, shaping, or bending processing, merely by way of example. The Examiner has not shown otherwise. As non-analogous art, Hirai has no bearing on the patentability of Claims 22-27.

Even if Hirai was somehow considered applicable, *arguendo*, it is not capable of combination with Hartig. That is, one of ordinary skill in the art at the time of Applicant's invention simply would not have looked to Hirai's teaching concerning optical branching filters for wavelength-division multiplexing optical communication for a material suitable for Hartig's optical coatings for glass, such as architectural glass. It is respectfully submitted that a portion of a complicated, multilayered optical structure that may be useful in a particular application, such as a particular type of optical filtering in an optical communication application, is not *per se* useful as a portion of a completely different structure that may be useful in a completely different application, nor would it have been understood as such by one of ordinary skill in the art at the time of the invention. There is simply no teaching or suggestion that supports the combination of the disparate Hartig and Hirai references. The Examiner has not demonstrated otherwise.

In view of the foregoing, it is believed that any rejections of Claims 22-27 based on Hartig in view of Hirai cannot stand.

While the Examiner appears to have alleged that the method of Claim 16 (hereinafter, corresponding new Claim 39) is met by the disclosure of Hartig (see Office Action, page 3, lines 7-9), it is assumed that any such allegation was made in error, as there is no rejection of Claim 39 based solely on Hartig and nothing in Hartig alone teaches or suggests a method of coating a substrate, comprising: depositing a first anti-reflection layer of a dielectric over a substrate; depositing a metallic layer over the first anti-reflection layer; and depositing a second anti-reflection layer of a dielectric over the metallic layer; wherein at least one of the first anti-reflection layer and the second anti-reflection layer comprises an amorphous material, the amorphous material comprising titanium oxide and an additive, wherein the

additive in an oxidized state does not form a solid solution with the titanium oxide, as recited in Claim 39. The Examiner has provided no *prima facie* case otherwise.

As to the rejections of Claims 16 and 18-21 (hereinafter, corresponding new Claims 39-43) based on the alleged combination of Hartig in view of Hirai, it is submitted that Hirai is non-analogous art, for the reasons set forth above. As such, Hirai has no bearing on the patentability of Claims 40-44.

In view of the foregoing, it is believed that any rejections of Claims 39-43 based on Hartig in view of Hirai cannot stand.

Former Claim 16 (hereinafter, corresponding new Claim 39) was rejected under 35 U.S.C. Section 103(a) as allegedly being unpatentable over U.S. Patent No. 6,514,620 to Lingle *et al.* (hereinafter, simply "Lingle") in view of Hirai.

While the Examiner appears to have alleged that the method of Claim 16 (hereinafter, corresponding new Claim 39) is met by the disclosure of Lingle (see Office Action, page 5, lines 2-3), it is assumed that any such allegation was made in error, as there is no rejection of Claim 39 based solely on Lingle and nothing in Lingle alone teaches or suggests a method of processing a substrate, comprising: depositing a first anti-reflection layer of a dielectric over a substrate; depositing a metallic layer over the first anti-reflection layer; and depositing a second anti-reflection layer of a dielectric over the metallic layer; wherein at least one of the first anti-reflection layer and the second anti-reflection layer comprises an amorphous material, the amorphous material comprising titanium oxide and an additive, wherein the additive in an oxidized state does not form a solid solution with the titanium oxide, as recited in Claim 39. The Examiner has provided no *prima facie* case otherwise.

After recognizing various deficiencies in Lingle, the Examiner alleges that it would have been obvious to one of ordinary skill in the art to combine Lingle with the teachings of Hirai for the benefit of making a low-emissivity coated article with desired optical properties (including transmission, reflection, and anti-reflection properties) and polarization independence. (See Office Action, page 5.) However, Hirai is non-analogous art, as set forth above, and thus, has no bearing on the patentability of Claim 39.

Even if Hirai were somehow considered applicable, *arguendo*, it is not capable of combination with Lingle. That is, one of ordinary skill in the art at the time of Applicant's invention simply would not have looked to Hirai's teaching concerning optical branching

filters for wavelength-division multiplexing optical communication for a material suitable for Lingle's optical coatings for glass, such as architectural glass. It is respectfully submitted that a portion of a complicated, multilayered optical structure that may be useful in a particular application, such as a particular type of optical filtering in an optical communication application, is not *per se* useful as a portion of a completely different structure that may be useful in a completely different application, nor would it have been understood as such by one of ordinary skill in the art at the time of the invention. There is simply no teaching or suggestion that supports the combination of the disparate Lingle and Hirai references. The Examiner has not demonstrated otherwise.

In view of the foregoing, it is submitted that any rejection of Claim 39 based on Lingle in view of Hirai cannot stand.

As to the additional new Claims 28-38, which depend variously from Claim 22, it is submitted that each of same is patentable in view of Hartig, Hirai (*arguendo*), and any combination thereof (*arguendo*), for at least the reasons set forth above in relation to Claim 22. As to the additional new Claims 44-52, which depend variously from Claim 39, it is submitted that each of same is patentable in view of Hartig, Hirai (*arguendo*), and any combination thereof (*arguendo*), and in view of Lingle, Hirai (*arguendo*), and any combination thereof (*arguendo*), for at least the reasons set forth above in relation to Claim 39.

### CONCLUSION

Claims 22-52 define novel and non-obvious subject matter of the present invention. An early notification that the application is in condition for allowance is earnestly solicited.

Respectfully submitted,



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